

Claims:

1. A process for obtaining a synthetic organic aromatic heterocyclic rod fiber or film with high tensile strength and/or modulus comprising spinning a synthetic organic polymer to a aromatic heterocyclic rod fiber or obtaining the synthetic organic polymer as an aromatic heterocyclic rod film, followed by loading the fiber or film in the presence of a processing aid, at a temperature below the boiling point of the processing aid and above -50°C , at a tension of 10 to 95 % of the fiber or film breaking strength, followed by removing the processing aid and/or performing a heating step at a tension of 10 to 95 % of the fiber or film breaking strength.
2. The process according to claim 1 wherein as-spun fiber or as-obtained film is subjected to the loading step.
3. The process according to claim 1 or 2 wherein the loading step is performed between -18 and room temperature, preferably between 0 and 20°C .
4. The process according to any one of claims 1 to 3 wherein the heating step is performed at 100°C or higher.
5. The process according to any one of claims 1 to 4 for making a fiber or film wherein the as-spun fiber or as-obtained film is subjected to a treatment step with the processing aid in the gas or vapor phase at a temperature between 50°C and 300°C , preferably between 80°C and 100°C , between the loading and heating step.
6. The process according to any one of claims 1 to 5 wherein the processing aid is an aqueous solution, preferably water.
7. The process according to any one of claims 1 to 6 wherein the processing aid is removed simultaneously with performing the heating step.
8. The process according to any one of claims 1 to 7 wherein the synthetic organic heterocyclic rod fiber or film is a PIPD fiber or film.
9. A synthetic organic fiber obtainable by the process of claim 1, characterized in that the fiber is PIPD with a linear filament density between 0.1 and 500 dtex and an average tensile strength higher than 3200 mN/tex .
10. The synthetic organic fiber of claim 9, wherein the average tensile strength is higher than 3500 mN/tex .
11. A synthetic organic film obtainable by the process of claim 1, characterized in that the modulus of the film is at least 14 GPa , preferably at least 20 GPa .